<u>In the Specification</u>:

Kindly replace paragraph [0003] with the following amended paragraph:

[0003] While the conventional Monte Carlo method is often an acceptable sampling method, it is typically accurate only after it has converged in statistics. This convergence can take a very large number of random samples to provide the desired accuracy. For example, a simulator utilizing the Monte ~~Carolo~~ <u>Carlo</u> method may include many loops (for example, "For Loops" would be used in C), nested or otherwise, to generate an accurate statistical sample with multiple random variables. Running such loops with the many iterations can take hours or days, depending on the speed of the computer or processor. Further, the amount of time may increase more than linearly with the number of samples or the number of loops required to achieve convergence. Effective random-number generation is therefore desirable.

Kindly replace paragraph [0006] with the following amended paragraph:

[0006] It is therefore an object of the present invention to provide a random number generation method and system that requires less <u>computing</u> time than prior methods.

Kindly replace paragraph [0012] with the following amended paragraph:

[0012] Figure 1 is a graph schematically illustrating the mapping of uniform random numbers to generate a given cumulative density function <u>(CDF)</u> in accordance with a preferred embodiment of the present invention;

Kindly replace paragraph [0021] with the following amended paragraph:

[[0021] In the second component of the invention, shown by reference number 14 of Figure 3, thereafter, a set of values {X} are generated in ascending order with a specified PDF and a corresponding set of descending CDF values. This is accomplished through a lookup table

listing X vs. Y values on the CDF curve, an illustrative example of which is shown in Figure 1. The designator X is a random number with a CDF Y, and Y(X) is the probability that a randomly selected number from the set will be greater than or equal to X. In order to look-up the X value for a given input value R_i in {R}, the conventional concept is to compare the randomly quantified number R_i with members of {Y} to find the closest discrete value Y_k to R_i and therefore the corresponding value X_k. In other words, a value in the random [[set]] source set {R} is selected and mapped or looked-up on the CDF curve/table to determine the corresponding value. This process is repeated with each member of {R} to get a set of numbers with the specified CDF.

Kindly replace paragraph [0023] with the following amended paragraph:

[0023] The preferred method provides a more efficient way to look up the X value for each input element in {R}. Initially, all values of {R} are arranged in, say, a descending order. Since both {Y} and {R} are in descending order, it would not be necessary to begin at Y_1 each time to find the nearest value in {Y}. Since the next value of R, R_{k+1}, is smaller than R_k, Y_{k+1} is smaller or equal to Y_K. In fact, Y_{K+1} is very close to Y_K, and the search becomes very fast. Since significantly [[few]]<u>fewer</u> comparisons with candidate numbers are required, significant overall savings in processing can be achieved through utilization of the disclosed method and system. After the lookup has been completed, the order of {X} values are scrambled, as generally indicated by reference number 16. Order randomization may be achieved in one of several ways. For example, it may be done by generating a pseudo-random number (PRN) sequence {P}, which is then truncated to the length of {X} if necessary. {X} is then reordered by the elements of {P} as the latter are generated one at a time.

Kindly replace paragraph [00025] with the following amended paragraph:

[0025] The third component of the invention, as generally indicated by reference number 18, is the companding component. In many applications, the companding improves the representation of certain regions of interest on the PDF. This concept is particularly useful for PDFs where a section of interest has a much lower probability. This means that very few points are generated in this region by the conventional method, which therefore requires a much larger number of experiment samples to guarantee a sufficient representation of the low probability section. As the required ~~members of samples increased~~ numbers of samples increases, the run-time may increase even more rapidly. At the same time, more than enough samples are generated for the high probability areas of the PDF and are thus "wasted." Thus, the companding component increases the representation of low-probability samples without increasing the representation high-probability samples.